

The language objected to by the Examiner is directed to the specific embodiment shown in Fig. 2(b), which shows that the height of flight portion varies over a 180° angle centered around the part of the flight portion that has the lowest height. In other words, the rotational angle, over which the height of the flight portion varies, begins 90° before the lowest height of the flight portion and ends 90° after the lowest height of the flight portion. Applicant submits that the language of claim 10, as previously amended, accurately describes this feature. Thus, Applicant submits that it is not necessary to add the words “at” as the Examiner has suggested.

Applicant also refers the Examiner to the explanatory figures shown in Attachment A enclosed with the present Response. With regard to the present invention, the appended figure shows the screw when it is viewed from the screw axial direction. As seen from the drawing, the height of the flight according to the present invention varies in the circumferential direction on the down stream side.

In view of the above, Applicant respectfully requests that the Examiner withdraw the claim objection.

Claim Rejections under 35 U.S.C. §102

Claims 10, 12-14 and 20 all stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Sugano (U.S. 6,485,287).

As an initial matter, Applicant notes that the Examiner relies entirely on the figures of Sugano to support the rejection of claims 10, 12-14 and 20.

MPEP 2131 states “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”

Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed.

Cir. 1987). MPEP 2131 also states “[t]he elements must be arranged as required by the claim...” *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Moreover, the Federal Circuit has held “it is not enough that the prior art reference discloses part of the claimed invention, which an ordinary artisan might supplement to make the whole, or that it includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention.” *See Net MoneyIn v. Verisign, Inc. et al*, No. 2007-1565 (Fed. Cir. 2008).

Further, MPEP 2125 states “[d]rawings and pictures can anticipate claims if they clearly show the structure which is claimed.” *In re Mraz*, 455 F.2d 1069, 173 USPQ 25 (CCPA 1972). However, MPEP 2125 further states “the picture must show **all** claimed structural features and **how they are put together.**” In other words, in order for the applied reference to anticipate the features claimed, the figures of Sugano must **clearly** show each feature claimed, and the features must be **clearly** arranged exactly as recited in the claims. As Applicant argued in the previously filed response, Sugano fails to teach the features as claimed.

Claim 10

In specific regard to claim 10, Applicant previously argued that the drawings of Sugano fail to **clearly** show “a height of a flight portion of that part of the screw located below the hopper port is lower in height than a height of a flight portion located on a downstream side” nor do the drawings **clearly** show the height varies “continuously in a peripheral direction over a predetermined angle”. In response to this argument, the Examiner asserts that the term “flight portion” could be interpreted to mean “a series of stairs rising from one landing to another” and thus the Examiner asserts that the heightened area between the blades shown in Fig. 1

corresponds to a “flight portion”. Applicant submits that the rejection misconstrues the Sugano reference.

As would be apparent to a person of ordinary skill in the art, the term “flight portion” is a commonly used term of art related to screws, which corresponds with the thread or blade portion of the screw. Thus, Applicant submits that it is improper for the Examiner to assert that the portion between blades of the screw corresponds with the claimed flight portion because a person of ordinary skill in the art would understand “flight portion” refers to the blade of the screw. All figures of Sugano, including Fig. 1, appear to show that the height of the blades is constant along the length of the screw. Thus, none of the figures of Sugano **clearly** show “a height of a flight portion of that part of the screw located below the hopper port is lower in height than a height of a flight portion located on a downstream side”. Accordingly, Applicant submits that claim 10 is patentable over the applied references for at least these reasons.

Furthermore, claim 10 also recites “said height at said part **varies continuously in a peripheral direction over a predetermined rotational angle** ...the predetermined rotational angle is **an angle beginning 90° before a position where the height of the flight is lowest and ending 90° after the position where the height of the flight is lowest**”. In other words, the height of the flight portion varies continuously over a rotational angle, which begins 90° before the lowest height of the flight portion and ends 90° after the lowest height of the flight portion. None of the figures show a continuous variation in height over any rotational angle, let alone the specific rotational angle recited. Thus, Sugano also does not **clearly** show these features of claim 10.

Applicant submits that the above arguments were presented in the previously filed response, but were not addressed in any way by the Examiner in the current Office Action. Accordingly, Applicant respectfully requests that the Examiner respond to the arguments if the rejection is to be maintained.

Finally, Applicant refers the Examiner to the explanatory figures shown in Attachment A enclosed with the present Response. With regard to the present invention, the appended figure shows the screw when it is viewed from the screw axial direction. As seen from the drawing, the height of the flight according to the present invention varies in the circumferential direction on the down stream side. On the other hand, according to the screw (8) of Sugano, the diameter of the screw shaft is small ($Dr1$) on the downstream side and large ($Dr2$) on the upstream side. The height of the flight, however, is *uniform* in the circumferential direction.

At least based on the foregoing, Applicant submits that claim 10 is patentable over the cited reference.

Claim 14

Further, claim 14 recites “wherein diameter of the thread on an upstream side of the screw are made larger than diameters of the threads on a downstream side”. Again, the Examiner relies entirely on the figures of Sugano to teach these claimed features. However, none of the figures clearly show any variation in the diameter of the thread along the length of the screw, let alone the specific variation recited. Therefore, Applicant submits that claim 14 is also patentable over the applied references for this additional reason.

Claims 12, 13, and 20

Further, claims 12, 13, and 20 depend from claim 10, which has been shown above to be patentable over the Sugano reference. Therefore, Applicant submits that these claims are patentable at least by virtue of their dependency.

Allowable Subject Matter

Claim 15 has been indicated as allowable if rewritten in independent form.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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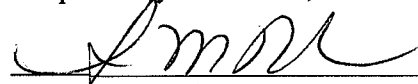
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Date: September 15, 2009

Respectfully submitted,

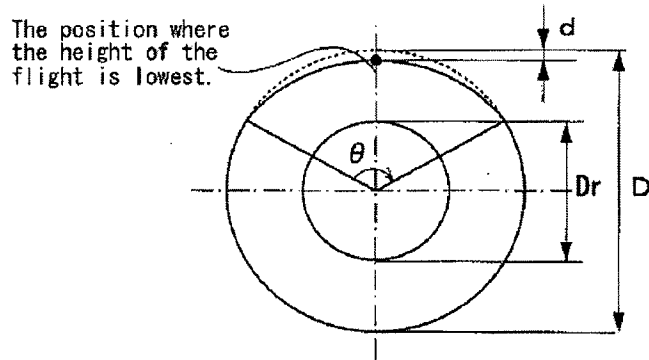


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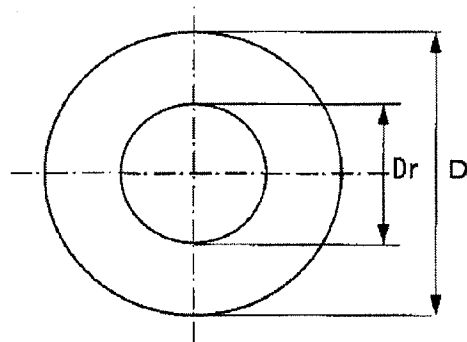
ATTACHMENT A

The Present Invention:

(a) below the hopper

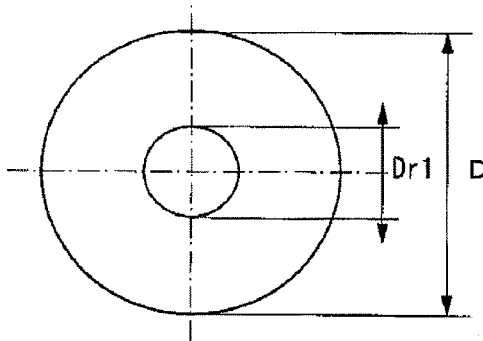


(b) the downstream side



The Sugano Reference:

(a) below the hopper



(b) the downstream side

